PATENT SPECIFICATION 738,298

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COMPLETE SPECIFICATION.

Wire Cutter.

We, DANITE HARD METALS LIMITED, a British Company, of Danite Works, Carr Hill, Balby, Doncaster, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to wire-cutters of the kind comprising a pair of opposed cutting jaws carried one at the end of each of a pair of pivotally connected handles which are manipulable for closing and opening the jaws into and out of abutting relation during use, said jaws having cutting edges formed by inserts or attached pieces of tungsten carbide or other hard material.

It is found that where tungsten carbide or similar hard alloy is used for the cutting edges, damage thereof results when said cutting edges come into violent contact in severing metal wire.

The object of this invention is to provide an improved wire cutter in which the above disadvantage will be overcome.

It is here convenient to point out that it is already known to provide tools for stripping insulation from electric wires where, in one such tool a pair of jaws is provided having opposing cutting edges which are adapted to meet or to pass one another and which are provided with recessed portions which do not meet so as to accommodate the electric wire without cutting said wire while in another construction of tool a pair of jaws is provided with cutting edges and with means adapted to be adjustably set so as to prevent the cutting edges from meeting and thereby cut the insulation without cutting the core of wire.

A wire-cutter of the kind before referred to according to this invention comprises a pair of handles extending into shanks which are bent to lie one upon and across the other whereat they are secured by a pivot pin, the outer ends of said shanks being formed into a pair of opposing jaws having meeting faces extending transversely with respect to the shanks and substantially in parallel with the axis of the pivot pin, said jaws being provided with opposing non-cutting abutment members in advance of and in parallel with at least one pair of opposing cutting edges composed of tungsten carbide or other suitable hard material whereby on closing of the jaws said cutting edges operate to sever wire inserted therebetween but are prevented from making impact with one another by contact with each other of the non-cutting abutment members.

The abutment members are integral with the jaws and may be disposed one each at opposite sides of a cutting edge in each jaw or interposedly of two cutting edges in each jaw, the arrangement being such that said abutment members come into contact so as to take the impact and determine the closed position of the jaws in which the cutting edges are spaced just sufficiently apart to prevent their making impact with one another.

Referring to the accompanying drawings:

Fig. 1 is an elevation of one form of wire-cutter made in accordance with this invention.

Fig. 2 is a plan.

Fig. 3 is a fragmentary perspective view depicting one of the jaws.

Fig. 4 is a fragmentary perspective view depicting an alternative form of jaw.

Fig. 5 is a fragmentary perspective view depicting a further alternative form of jaw.

Fig. 6 is a fragmentary perspective view depicting a still further alternative form of jaw.

In the form shown in Figs. 1, 2 and 3, the

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wire-cutter comprises a pair of handles 10 which are fashioned at their inner ends into shanks 11 suitably bent so as to lie one upon and across the other and pivotally held together by a pivot pin 12.

The shanks 11 are provided with jaws 13 having opposing faces extending transversely of the shanks and substantially in parallel with the axis of the pivot pin 12. Each jaw face is provided with spaced apart V-shaped end tips or inserts 14 of tungsten carbide or other suitable hard material so attached to the jaw face that the apical edge of each tip forms a cutting edge 15, each tip in one jaw face being opposed to a tip in the other jaw face. In the space between the two tips of each jaw face, a plane faced integral abutment member 16 projects therefrom slightly in advance of the cutting edges 15 formed by the tips, the abtument members of the two jaw faces being in opposing relation so that on closure of the jaws 13, the plane faces of said abutment members come into contact to take the shock of impact and thereby prevent the opposing cutting edges 15 making impact one with another.

In Fig. 4 an alternative form of tip or insert 14 is employed which is wedge shape in cross section and secured to the jaw face so that the cutting edge 15 formed by each tip or insert lies at the top of the jaw face.

In the further alternative shown in Fig. 5 a single V-shaped tip or insert is secured to each jaw face between two end abutment members 16, said tips or inserts being of similar shape and secured in position in like manner to those in Figs. 1 to 3.

Fig. 6 shows a still further alternative in which a single tip or insert is again secured to each jaw face, said tip or insert being of like shape to and secured in position similar to the inserts shown in Fig. 4.

The tips or inserts are secured in position by brazing or otherwise suitably so as to be attached to the end faces of the abutment members as well as to the jaw faces.

What we claim is:—

1. A wire-cutter of the kind referred to comprising a pair of handles extending into shanks which are bent to lie one upon and across the the other whereat they are secured by a pivot pin, the outer ends of said shanks being formed into a pair of opposing jaws having meeting faces extending transversely with respect to the shanks and substantially in parallel with the axis of the pivot pin, said jaws being pjrovided with opposing non-cutting abutment members in advance of and in parallel with at least one pair of opposing cutting edges composed of tungsten carbide or other suitable hard material whereby on closing of the jaws said cutting edges operate to sever wire inserted therebetween but are prevented from making impact with one another by contact with each other of the non-cutting abutment members.

2. A wire-cutter according to Claim 1 wherein the abutment members provide leading areas interposed one in each cutting edge intermediate the length thereof.

3. A wire-cutter according to Claim 1 wherein spaced abutment members in each jaw face provide leading areas at each end of the cutting edge thereof.

4. A wire-cutter constructed, arranged and adapted for use substantially as described with reference to Figs. 1, 2 and 3 or Fig. 4 or Fig. 5 or Fig. 6 of the accompanying drawing.

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PROVISIONAL SPECIFICATION.

Wire Cutter.

We, DANITE HARD METALS LIMITED, a British Company, of Danite Works, Carr Hill, Balby, Doncaster, do hereby declare this invention to be described in the following statement:—

This invention relates to wire-cutters of the kind comprising a pair of opposed cutting jaws carried one at the end of each of a pair of pivotally connected handles which are manipulable for closing and opening the jaws into and out of abutting relation during use, said jaws having cutting edges formed by inserts or attached pieces of tungsten carbide or other hard material.

It is found that where tungsten carbide or similar hard alloy is used for the cutting edges, damage thereof results when said cutting edges come into violent contact in severing metal wire.

The object of this invention is to provide an improved wire cutter in which the above disadvantage will be overcome.

In a wire-cutter of the before-indicated kind according to this invention there are provided, in association with the cutting jaws, abutment members which are adapted to make contact with the other in order to prevent impact of the opposing cutting edges on closing of the jaws during the cutting operation.

The abutment members may be integral with the cutting jaws and form non-cutting

areas thereof alongside or interposedly in the cutting edge of each jaw, the arrangement being such that said abutment faces come into contact so as to take the impact and determine the closed position of the jaws in which the cutting edges are spaced just sufficiently apart to prevent their making impact with one another.

The jaws may be provided with opposing non-cutting leading areas in their cutting edges or faces which, on closing of the jaws after severing a length of wire, the adapted to come into abutment with one another slightly in advance of the cutting edge so as to take the shock of impact and thereby prevent the cutting edges from making actual contact with one another.

The non-cutting leading areas may be interposed one in each cutting edge intermediate the length thereof.

One form of wire-cutter according to this invention comprises a pair of handles which are extended into shanks suitably bent so as to lie one upon and cross one another whereat they are pivoted together. The shanks are provided remote from the handles, with jaws having opposing faces extending transversely of the shanks substantially in parallel with the axis of the pivot. Each jaw face is provided with V-shaped tips of tungsten carbide so attached to the jaw face that the apical edge of each tip forms a cutting edge, each tip in one jaw face being opposed to a tip in the other jaw face. In the space between the two tips of each jaw face, a plane faced protrusion projects therefrom slightly in advance of the cutting edge formed by the tip, the protrusions of the two jaw faces being in opposing relation so that on closure of the jaws, the plane faces of said protrusions come into abutment to take the shock of impact and to prevent the cutting edges making contact one with another.

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738,298 COMPLETE SPECIFICATION

1 SHEET

This drawing is a reproduction of the Original on a reduced scale.

Fig. 1.

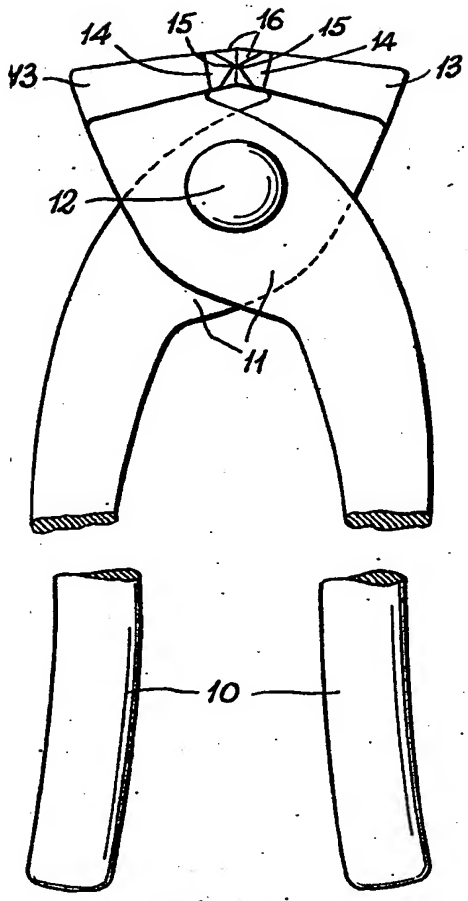

Fig. 2.

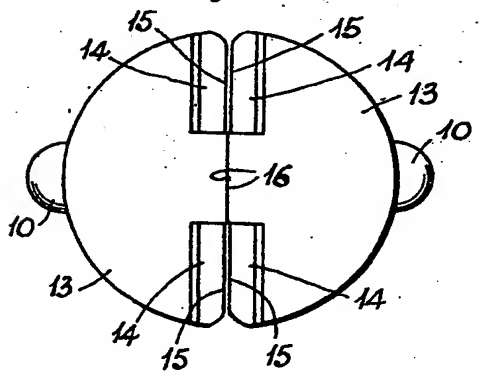

Fig. 3.

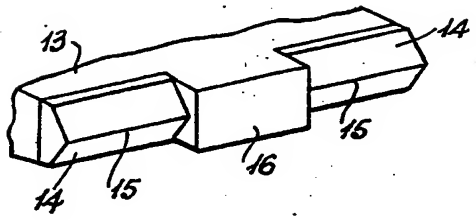

Fig. 4.

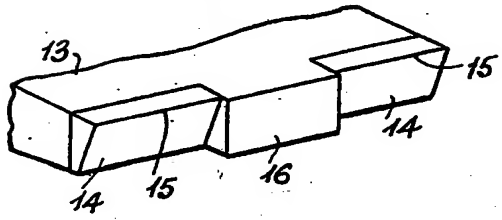

Fig. 5.

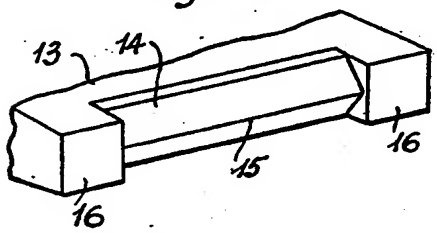

Fig. 6.